

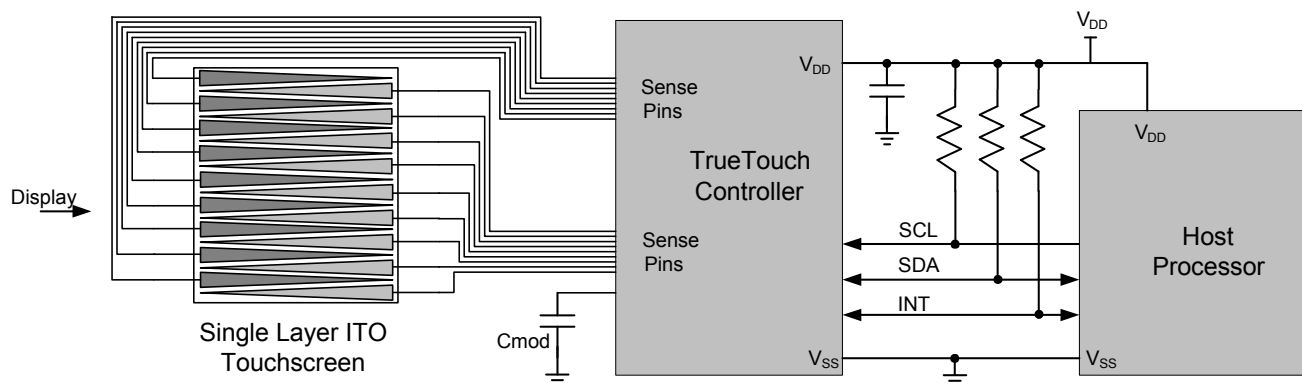
TrueTouch® Single-Touch Touchscreen Controller

Features

- TrueTouch® capacitive touchscreen controller
 - True single-layer ITO sensor support – no bridges
 - Lowers touchscreen system cost
 - Single finger position reported
 - X, Y positions and Z magnitude reported
 - Screen sizes up to 3.6-inch diagonal
 - Up to 32 sense pins
 - Fat finger detection and tracking
 - Large object detection
 - Self-calibrating to environmental changes
 - Resistant to display noise
 - Robust operation in noisy RF environment
 - 1.71-V to 5.5-V input supply range
 - Single supply voltage
 - Compatible with 1.8-V I²C signaling
 - Integrated voltage regulators – no need for dedicated voltage regulators
- Performance
 - Noise-free resolution: 0.1 mm
 - Accuracy with 1 finger on the touchscreen: 0.8 mm
 - >110-Hz refresh rate with one finger on the touchscreen
 - Best-in-class active power of 3.6 mW
 - Best-in-class Low-Power state current: 0.7 mA
 - Best-in-class Deep-Sleep state current: 100 nA

- Extended feature set
 - Water rejection – no false touches
 - Capacitive buttons supported
 - On-chip gesture detection
 - Single-click, double-click
 - One-finger pan gestures
 - Two-finger pinch/zoom gestures ^[1]
- Sensor and system design
 - Supports chip-on-flex and chip-on-board
 - Supports plastic film and glass single-layer touch sensors
 - Supports a variety of touchscreen sensor stackups
- Communication interface
 - I²C slave up to 400 kbps
 - SPI slave with 2 Mbps sustained data throughput
 - Field upgrades through integrated bootloader
- Host development kit (HDK)
 - Android driver support
 - Supports custom driver development
 - TrueTouch host emulator – acts as host for early prototyping
- Package options
 - 32-pin 5 × 5 × 0.55-mm QFN
 - 48-pin 7 × 7 × 1.0-mm QFN
 - 30-ball 2.2 × 2.32 × 0.4-mm WLCSP

CY8CTST241/CY8CTST242 Block Diagram



Note

1. Pinch/zoom gestures are only supported on CY8CTST242.

Ordering Information

The following table lists the TrueTouch Standard Product Single Touch Touchscreen Controllers. For information on other TrueTouch families, visit <http://www.cypress.com/truetouch>.

Table 1. Device Ordering Information

Part Number	TrueTouch						Sensor		Minimum Interface Voltage	Supply Voltage Operating Range	Bootloader	I ² C	SPI	UART	Package
	Typical Screen Size (in.) (4:3 Aspect Ratio)	Maximum Nodes	Maximum Fingers	On-chip Gesture Decoding	True Single Layer Sensor	Large Object Detection	Glass	Film							
CY8CTST241-LQI-01(T)	3.3 ^[2]	24	1	✓	✓	✓	✓	✓	1.8	1.71-5.5	✓	✓	✓	✓	32-pin QFN
CY8CTST241-LTI-01(T)	3.6 ^[2]	32	1	✓	✓	✓	✓	✓	1.8	1.71-5.5	✓	✓	✓	✓	48-pin QFN
CP8CTST241-FNC-01(T)	3.6 ^[2]	24	1	✓	✓	✓	✓	✓	1.8	1.71-5.5	✓	✓	✓	✓	30-ball WLCSP
CY8CTST242-LQI-01(T)	3.6 ^[2]	24	2	✓	✓	✓	✓	✓	1.8	1.71-5.5	✓	✓	✓	✓	32-pin QFN
CY8CTST242-LTI-01(T)	3.6 ^[2]	32	2	✓	✓	✓	✓	✓	1.8	1.71-5.5	✓	✓	✓	✓	48-pin QFN
CP8CTST242-FNC-01T	3.6 ^[2]	24	2	✓	✓	✓	✓	✓	1.8	1.71-5.5	✓	✓	✓	✓	30-ball WLCSP

Ordering Code Definitions

Cx8 C TST 24x - xxx xx(T)

Feature Set: (T=Tape and Reel)
01 = Basic feature set

Pins/Package Type:

LQI = 36-Pin 0.6 mm Height QFN, Industrial temperature grade
LTI = 48-Pin 1.0 mm Height QFN, Industrial temperature grade
FNC = 30-Ball 0.4 mm Height WLCSP, Commercial temperature grade

Sub-family Identifier:

241 = one finger tracking and reporting
242 = two finger tracking and reporting

Family Code: TST = Single-Touch Controller

Technology Code: C = CMOS

Marketing Code: CY8 = Cypress PSoC
CP8 = Custom part Cypress PSoC

Note

2. A screen size of 3.6-inches is met using 6.1-mm pitch for 24-nodes devices and a 4.1-mm pitch for 32-node devices.

Document History Page

Document Title: CY8CTST241/CY8CTST242, TrueTouch® Single-Touch Touchscreen Controller Document Number: 001-91041				
Rev.	ECN No.	Orig. of Change	Submission Date	Description of Change
**	4278978	SWU	02/12/2014	New summary data sheet.
*A	5378716	ELG	08/06/2016	Added CY8CTST241 part related information in all instances across the document. Added CY8CTST241/CY8CTST242 Block Diagram . Updated Ordering Information : Updated part numbers. Updated Ordering Code Definitions . Updated to new template.

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